Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-44 (Canceled).

45. (New) A method of cleaving a nucleic acid target in a cell comprising contacting the cell with a single-stranded siRNA molecule, wherein the single-stranded RNA molecule:
is complementary to the nucleic acid target molecule;
is from 14 to 50 nucleotides in length; and
comprises a phosphate analog at the 5'-terminus; and
thereby cleaving the nucleic acid target molecule in the cell.

46. (New) The method of claim 45 wherein the single-stranded RNA molecule is from 15 to 29 nucleotides in length.

47. (New) The method of claim 45 wherein at least the 14 5'-terminal nucleotides of the single-stranded RNA molecule are complementary to the nucleic acid target molecule.

48. (New) The method of claim 45, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is selected from among: a 5'-guanosine cap, a 5'-adenosine cap, a 5'-monothiophosphate, a 5'-monodithiophosphate, a 5'-phosphorothiolate, a 5'-phosphoramidate, a 5'-alkylphosphonate, and a 5'-alkyletherphosphonate.

49. (New) The method of claim 45, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is selected from among: a 5'-monophosphate, a 5'-diphosphate, and a 5'-triphosphate.

50. (New) The method of claim 49, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is a 5'-triphosphate.

51. (New) The method of claim 45, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule comprises a monophosphate, a diphosphate, or a triphosphate in which at least one oxygen atom of the monophosphate, diphosphate, or triphosphate has been replaced with a sulfur atom.

52. (New) The method of claim 51, wherein the phosphate analog is selected from among 5'-alpha-thiotriphosphate and 5'-gamma-thiotriphosphate.

53. (New) The method of claim 45, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is an alkylphosphonate.

54. (New) The method of claim 53, wherein the alkylphosphonate has the formula: RP(OH)(O)-O-5' or $(OH)_2(O)P$-5'-CH_2-, where R is a C_1-C_3 alkyl.

55. (New) The method of claim 45, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is an alkyletherphosphonate.

56. (New) The method of claim 55, wherein the alkyletherphosphonate has the formula: RP(OH)(O)-O-5', where R is an alkylether.

57. (New) The method of claim 45, wherein the single-stranded RNA molecule comprises at least one modified nucleoside.

58. (New) The method of claim 57, wherein at least one modified nucleoside comprises a sugar modification.

59. (New) The method of claim 58, wherein at least one sugar modification is a 2'-sugar modification.

60. (New) The method of claim 45, wherein the single-stranded RNA molecule comprises at least one phosphorothioate linkage.

61. (New) The method of claim 45, wherein the single-stranded RNA molecule comprises at least one mismatch.

62. (New) The method of claim 45, wherein the single-stranded RNA molecule comprises a region at the 3'-terminus comprising at least one adenosine, guanosine or combination thereof.

63. (New) The method of claim 45, wherein the cell is a eukaryotic cell.

64. (New) The method of claim 63, wherein the eukaryotic cell is a plant cell.

65. (New) The method of claim 63, wherein the eukaryotic cell is an animal cell.

66. (New) The method of claim 65, wherein the animal cell is selected from the group consisting of a mammalian cell, an embryonic cell, a pluripotent stem cell, a tumor cell and a virus-infected cell.

67. (New) The method of claim 66, wherein the tumor cell is a teratocarcinoma cell.

68. (New) The method of claim 65, wherein the animal cell is a human cell.

69. (New) A method of activating RISC and thereby cleaving a nucleic acid target molecule in a cell comprising contacting the cell with a single-stranded oligonucleotide, wherein the single-stranded oligonucleotide:
is complementary to the nucleic acid target molecule;
is from 15 to 29 nucleotides in length; and
comprises a phosphate analog at the 5'-terminus; and
thereby activating RISC and cleaving the nucleic acid target molecule in the cell.

70. (New) The method of claim 69 wherein at least the 14 5'-terminal nucleotides of the single-stranded oligonucleotide are complementary to the nucleic acid target molecule.

71. (New) The method of claim 69, wherein the phosphate analog at the 5'-terminus of the single-stranded oligonucleotide is selected from among: a 5'-guanosine cap, a 5'-adenosine cap, a 5'-monothiophosphate, a 5'-monodithiophosphate, a 5'-phosphorothiolate, a 5'-phosphoramidate, a 5'-alkylphosphonate, and a 5'-alkyletherphosphonate.

72. (New) The method of claim 69, wherein the phosphate analog at the 5'-terminus of the single-stranded oligonucleotide is selected from among: a 5'-monophosphate, a 5'-diphosphate, and a 5'-triphosphate.

73. (New) The method of claim 72, wherein the phosphate analog at the 5'-terminus of the single-stranded oligonucleotide is a 5'-triphosphate.

74. (New) The method of claim 69, wherein the phosphate analog at the 5'-terminus of the single-stranded oligonucleotide comprises a monophosphate, a diphosphate, or a triphosphate in which at least one oxygen atom of the monophosphate, diphosphate, or triphosphate has been replaced with a sulfur atom.

75. (New) The method of claim 74, wherein the phosphate analog is selected from among 5'-alpha-thiotriphosphate and 5'-gamma-thiotriphosphate.

76. (New) The method of claim 69, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is an alkylphosphonate.

77. (New) The method of claim 76, wherein the alkylphosphonate has the formula: RP(OH)(O)-O-5' or $(OH)_2(O)P$-5'-CH_2-, where R is a C_1-C_3 alkyl.

78. (New) The method of claim 69, wherein the phosphate analog at the 5'-terminus of the single-stranded RNA molecule is an alkyletherphosphonate.

79. (New) The method of claim 78, wherein the alkyletherphosphonate has the formula: RP(OH)(O)-O-5', where R is an alkylether.

80. (New) The method of claim 69, wherein the single-stranded oligonucleotide comprises at least one modified nucleoside.

81. (New) The method of claim 80, wherein at least one modified nucleoside comprises a sugar modification.

82. (New) The method of claim 81, wherein at least one sugar modification is a 2'-sugar modification.

83. (New) The method of claim 69, wherein the single-stranded RNA molecule comprises at least one phosphorothioate linkage.

84. (New) The method of claim 69, wherein the single-stranded RNA molecule comprises at least one mismatch.

85. (New) The method of claim 69, wherein the single-stranded RNA molecule comprises a region at the 3'-terminus comprising at least one adenosine, guanosine or combination thereof.

86. (New) The method of claim 69, wherein the cell is a eukaryotic cell.

87. (New) The method of claim 86, wherein the eukaryotic cell is a plant cell.

88. (New) The method of claim 86, wherein the eukaryotic cell is an animal cell.

89. (New) The method of claim 88, wherein the animal cell is selected from the group consisting of a mammalian cell, an embryonic cell, a pluripotent stem cell, a tumor cell and a virus-infected cell.

90. (New) The method of claim 89, wherein the tumor cell is a teratocarcinoma cell.

91. (New) The method of claim 89, wherein the animal cell is a human cell.

92. (New) The method of claim 45, wherein the single-stranded siRNA molecule is a single-stranded antisense siRNA molecule.